Section 2. Status of Pending Claims and Amendments:

Claims 1 - 7 and 11 – 23 (20 claims) are pending in this case as amended below. Claims 1 – 7, 11, 12, 14 and 16 – 18 are currently amended. Claims 13, 15, 19 and 20 are original, un-amended claims. Claims 8 – 10 are cancelled in favor of new claims 21 – 23.

1. **(Currently Amended)** A computer hardware and software-implemented method of reducing errors and uncertainty in construction projects for practical application in the field of architecture and the technological arts of construction and computer operations for efficient administration of construction contract bidding, letting and management processes, involving construction [topologically subdividing] project work information included in construction project plans and [of linking said subdivided plan information to at least one plurality of] construction project contracts and/or subcontracts, [to enhance the precision, clarity, specificity and completeness of both said plans and said subcontracts,] said plans including [at least one] a plurality of construction plan sheet drawings of a construction project, said computer including a central processor and and a computer readable memory device, and said software includes software code for controlling the operation of said computer, comprising the following steps in any operative order:

(a) applying at least one electronic overlay from a computer memory to a digitized construction plan sheet as a representational surface corresponding to a selected construction trade or category of construction work to be performed on said project, said overlay being aligned with the plan sheet permitting defining by ordered sets of coordinates, a plurality of topological subdivision regions of said at least one construction plan sheet, each of said plurality of subdivision regions uniquely identifying, delineating and locating [characterizing] a selected portion of the construction [scope of] work, object or element depicted graphically on [defined by] said at least one plan sheet;

(b) linking each of said plurality of overlay-defined subdivision regions to [one-of-a plurality of said] at least one of said construction project contracts or sub-contracts to accurately map the plan sheet depiction that identifies the selected portion of the construction work to be bid, to the correct contracts or sub-contract(s); and

(c) incorporating said linked regions into said contract to graphically reference [define a

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portion of] the scope of work to be performed under said contract <u>depiction on said plan sheets to enhance the precision, clarity and completeness of said work, thereby to reduce errors and omissions in construction performance under said contracts and/or sub-contracts</u>.

2. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [subdividing and linking] as in claim 1, wherein said <u>step of applying said overlay to define</u> topological subdivision <u>regions</u> [defining step] includes:

(a) inputting said at least one plan sheet as <u>digitized</u> electronic data to a computer data processing system including [a] <u>said central processor and</u> computer-readable memory device;

(b) storing said input plan sheet data as a <u>digital data</u> file in <u>said</u> computer-readable memory device;

(c) <u>defining in said plan sheet data said at least one subdivision region containing a portion of the project work by selecting points corresponding to at least 2-dimensional overlay essentially-orthogonal coordinates, said selected points defining areas in which said defined portion of the project work is graphically represented</u> [inputting data to said computer data processing system to define at least one of said plurality of subdivision regions of said at least one plan sheet, said subdivision region of said plan sheet characterizing a selected portion of the project work defined by said plans; said portion of said project work corresponding to the work to be performed under a particular one of said contracts]; and

(d) storing said <u>defined</u> [ition of said at least one] subdivision region as data in <u>a table in said</u> computer-readable memory device.

3. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [subdividing and linking] as in claim 2, further including <u>the steps of</u>:

(a) [the step of] providing <u>a table</u> in said computer-readable memory [a table defining] <u>that includes</u> a plurality of project subcontract work categories, each of said work categories corresponding to the work to be performed under one of said plurality of subcontracts; and

(b) [the step of] linking in said computer-readable memory said at least one subdivision region with a selected one of said work categories[, so as] to create a data structure correlating said at least one subdivision region with said selected work category.

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4. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [subdividing and linking] as in claim 3, further including <u>the steps of</u>:

(a) [the step of] providing in said computer-readable memory at least one subcontract document file; and

(b) [the step of] linking in said computer-readable memory [at least] said selected work category <u>to said contract and/or subcontract document file(s) to create</u> [, thereby including] in said data structure a correlation between said selected work category and said subcontract document file, and [thereby including in said data structure] a correlation between said at least one plan sheet subdivision region and said <u>contract and/or</u> subcontract document file<u>(s)</u> [, so as to characterize a selected portion of said project work to be performed under said subcontract] .

5. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [subdividing and linking] as in claim 4, <u>wherein said computer system includes a display device and a graphical user interface system</u> further including <u>the steps of</u>:

(a) [the step of] associating in <u>said</u> computer readable memory a selected icon file with said at least one subdivision region <u>of</u> [and] said at least one plan sheet;

(b) [the step of] displaying an image of said selected <u>contract and/or</u> subcontract document on <u>said</u> [a] display device connected to said computer system [, said computer system including a graphical user interface] ;

(c) [the step of] displaying said selected icon as an image superimposed upon said <u>conract and/or</u> subcontract image; and

(d) [the step of displaying] <u>retrieving from said data structure</u> an image of said subdivision region <u>of</u> [superimposed upon] said plan sheet in response to a selection of said icon using said graphic user interface <u>to graphically display said</u> [, so as to characterize at least a] portion of the work to be performed under said <u>contract and/or</u> subcontract [by plan information included in said subdivision and plan sheet images] .

6. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [subdividing and linking] as in claim 4, further including <u>the steps of</u>:

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(a) [the step of] associating an index reference with said at least one subdivision region and said at least one plan sheet;

(b) [the step of] printing said selected **contract and/or** subcontract document with said index reference included in said **contract and/or** subcontract document; and

(c) [the step of] printing an image of said indexed subdivision region superimposed upon said plan sheet [, so as to characterize] **to reference** at least a portion of the work to be performed under said **contract and/or** subcontract by plan **subdivision** information **being** included in said [subdivision and] plan sheet images.

7. (Currently Amended) A method of **reducing errors and uncertainty in construction projects** [subdividing and linking] as in claim 4, wherein said subdivision defining step [includes] **is selected from at least one of the steps of**:

(a) defining at least one closed boundary **box** [curve] coordinated with said plan sheet, said subdivision region comprising the plan area enclosed by said boundary**;**

(b) defining at least one trace path upon said at least one plan sheet, said trace path delimiting a trace area of said plan sheet lying within a predetermined distance from said path, said subdivision region comprising said trace area;

(c) defining at least one center point upon said at least one plan sheet, said center point delimiting an area of said plan sheet lying within a predetermined geometric boundary shape coordinate with said center point, said subdivision region comprising the plan area enclosed by said predetermined boundary shape; and

(d) defining a reference grid coordinate with said plan sheet, said grid dividing said sheet into a plurality of predefined sub-areas, and selecting one or more contiguous ones of said plurality of sub-areas, said subdivision region comprising said selected contiguous sub-areas.

8. (Cancelled) [A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:

(a) defining at least one trace path upon said at least one plan sheet, said trace path delimiting a trace area of said plan sheet lying within a predetermined distance from said

~~path, said subdivision region comprising said trace area.]~~

9. (Cancelled) [~~A method of subdividing and linking as in claim 4, wherein said subdivision-defining step includes:~~
~~(a) defining at least one center point upon said at least one plan sheet, said center point delimiting an area of said plan sheet lying within a predetermined geometric boundary shape coordinate with said center point, said subdivision region comprising the plan area enclosed by said predetermined boundary shape.~~]

10. (Cancelled) [~~A method of subdividing and linking as in claim 4, wherein said sub-division-defining step includes:~~
~~(a) defining a reference grid coordinate with said plan sheet, said grid dividing said sheet into a plurality of predefined sub-areas; and~~
~~(b) selecting one or more contiguous ones of said plurality of sub-areas, said subdivision region comprising said selected contiguous sub-areas.~~]

11. (Currently Amended) A method of <u>reducing errors and uncertainty in construction projects</u> [~~subdividing and linking~~] as in claim 1, wherein [~~said linking and incorporation is performed electronically and is remotely accessible via an Internet web-server,~~] said plans and said <u>contracts and</u> subcontracts <u>are accessibly and retrievably</u> [~~being~~] stored in electronic form <u>in said computer readable memory device, and which includes the step of providing an Internet web-server configured for remote access of said plans, contracts and subcontracts</u> for rendering and display via said web-server <u>and for bi-directional flow of information related thereto including at least one of data, bids, comments, edits and changes</u>.

12. (Currently Amended) A computer data processing system for <u>electronically</u> inter-linking <u>selected sections of</u> construction project plans to bidding contracts to <u>reduce errors and uncertainty in construction projects by</u> enhancing [~~enhance~~] the precision, clarity and completeness of both said plans and said contracts, wherein the scope of work of said project is <u>depicted in</u> [~~defined by~~] said plans, said plans comprising at least one sheet, and wherein said

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project work is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of said project work, said data processing system comprising:

(a) a computer-readable memory means for storing at least one plan file including digital image information of said plan sheets, **and for storing an overlay grid including essentially orthogonal coordinates**;

(b) a computer display means connected to said memory means for displaying said plan sheet image;

(c) **a computer processing means connected to said memory means for superimposing said overlay grid onto said plans to permit selection of coordinate information to define subdivision regions of said plans that uniquely bound and delineate selected portions of the project construction work depicted graphically on said plan sheet and for** storing **in said memory means said boundary defining information**;

(d) a computer-operator interface means for **selecting** [~~inputting information to specify~~] a closed boundary on said plan sheet image to define at least one subdivision region of said plan sheet image, said subdivision region corresponding to a portion of the project **construction** work **depicted in** [~~defined by~~] said plans; [~~a computer processing means connected to said memory means for said boundary specifying information~~] ; and

(e) linking means connected to said memory means for linking said stored plan image and said stored boundary information to at least one bidding contract, so as to define a portion of the project work to be performed under said contract.

13. (Original) A computer data processing system as in claim 12 which includes a computer program including code for causing said computer system to be accessible by at least one remote user via the Internet.

14. (Currently Amended) An **application** computer program product for **use in reducing errors and uncertainty in construction project by** the inter-linking of **selected portions of** construction project plans to **relevant** bidding contracts to enhance the precision, clarity and completeness of both said plans and said contracts, wherein:

(i) the scope of work of said **construction** project is **at least in part** defined by said plans comprising at least one plan sheet;

(ii) said project is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of the **construction** [scope of] project work; and

(iii) said computer program product is for **controlling application operations of** [operating on] a computer system including processor means, memory means, display means and operator input means;

said computer **application** program product comprising a computer usable medium having computer readable program code means embodied in said medium, said computer readable program code comprising:

(a) a first program code means for causing said computer system to read **files** [a file] stored in said memory means, said files including an image of at least one of said plan sheets **and an overlay grid to permit selection of coordinates information to define subdivision regions of said plans that uniquely bound and delineate selected portions of the project construction work depicted graphically on said plan sheets**;

(b) a second program code means for causing said computer system to display said plan sheet image;

(c) a third program code means for causing said computer system to **accept operator-selected inputs that** [input operator-specified information to] define **as information** a boundary around at least one subdivision region of said plan sheet image, said subdivision region corresponding to a portion of the project work **depicted in** [defined by] said plans;

(d) a fourth program code means for causing said computer system to store said boundary-defining information in said memory means; and

(e) a fifth program code means for causing said computer system to link said stored plan image and said stored boundary information to at least one bidding contract, so as to **more precisely, clearly and completely** [said] define a portion of the project work to be performed under said contract.

15. (Original) A computer program product as in claim 14, wherein said product includes a

sixth program code means for causing said computer system be accessible by at least one remote user via the Internet, said access of said remote user permitting said user to control the execution of at least one of said first through fifth program code means.

16. (Currently Amended) An electronic business method for construction contract bid and construction management control comprising;

a) **establishing** a website [, including] **that provides services selected from** at least one of construction design [services], inter-linking of **specific** construction project plan **images to related contracts and/or subcontracts** for bidding **on said** contracts **and subcontracts,** builder **and construction project** control, and **links to** affiliates [links];

b) [a website operation for providing] **operating said website to provide** said services to user-subscribers, including inputting [of] **by a website** operator, **of** [-]specific information **in** response to user requests, and information and communications to users; and

c) **providing and configuring** a computer data processing system for said interlinking and website operation.

17. (Currently Amended) An electronic business method as in claim 16 wherein;

a) said links **to affiliates** include hyperlinks [to affiliates] **that provide** [providing] services [under] **on a** referral or commission fee basis, said affiliate including at least one of owner, developer, architects, contractors, engineers, [S]surveyors, subcontractors, lenders, insurers, accounting[,] service providers, legal service providers, and title services.

18. (Currently Amended) An electronic business method as in claim 17 wherein; .

a) said **website** operator interactively provides said inter linking services **to** at least one user subscriber **selected from** [including] owners, developers, architects, contractors, and subcontractors.

19. (Original) An electronic business method as in claim 18 wherein;

a) said website includes an operator-managed secure project page accessible through said website for interactive display and rendering of linked plans and contracts, and exchange of e-mail

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information related to the project plan, bidding and construction phases of a particular project.

20. (Original) An electronic business method as in claim 16 wherein interaction between and among users and said operator is browser and e-mailed enabled.

21. (New) A method of reducing errors in construction projects as in claim 1 wherein said mapping of said overlay substantially orthogonal coordinates to said plans is provided by a system of almost-orthogonal equations having the property of progressively increasing transparency as the size of the subdivision cells is reduced.

22. (New) A method of reducing errors in construction projects as in claim 2 wherein said mapping of said overlay substantially orthogonal coordinates to said plans is provided by a system of almost-orthogonal equations having the property of progressively increasing transparency as the size of the subdivision cells is reduced.

23. (New) A method of reducing errors in construction projects as in claim 1 which includes the step of verifying completeness of mapping of the construction work, objects or elements by said computer processor executing code for at least one error detection algorithm that topologically proves completeness or non-duplication of topological subdivisions, by at least one of: a) comparing coordinates of subdivision region boundaries on each plan page to determine if there are any that are not contiguous with or overlap other regions, or b) summing the total area of all subdivision regions on a plan sheet and comparing that sum to the area in which work is depicted on said plan sheet, to determine if there are less than all elements of the plan sheet that have been mapped.

End of Section 2, Status of Claims and Amendments.